Amdt. Dated: February 16, 2005

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The listing of the claims will replace all prior versions, and listings, of claims in the application:

## **Listing of the Claims:**

- 1. (currently amended) A method for fabricating a fired ceramic article, the method comprising:
  - (a) forming a batch mixture of components comprising inorganic ceramic powder materials and organic compounds, the organic compounds having weight loss onset temperatures of varying values, wherein in a plurality of organic compounds, a first organic compound has a first weight loss onset temperature of lower value, then and a second and subsequent organic compound having has a higher weight loss onset temperature, the batch mixture being capable of yielding a fired ceramic article;
  - (b) intimately blending the components to form a workable and plasticized mixture;
  - (c) shaping the plasticized mixture into a green ceramic structural body and thereafter drying;
  - (d) <u>following drying</u>, heating the green ceramic structural body in a first phase, the heating being done in an oxidizing atmosphere to a temperature and for a time to enable sequential removal of the organic compounds, such that the organic compound with the first weight loss onset temperature being of lowest value is substantially removed prior to the organic compound with the subsequent higher weight loss onset temperature; and, and
  - (e) further heating the green ceramic structural body in a second phase to a temperature and for a time to initiate and sufficiently achieve the conversion of the green ceramic structural body into a fired ceramic article.
- (currently amended) The method of claim 1 wherein the inorganic raw materials include
  cordierite-forming materials in an effective-amount which is capable of yielding a fired
  ceramic article whose predominant crystal phase is cordierite.

## 3. (canceled)

4. (original) The method of claim 1 wherein the organic compounds include an oil or oil-based compound, a binder and optionally a surfactant.

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5. (original) The method of claim 4 wherein the oil or oil-based compound has a flash point in addition to having the weight loss onset temperature, the flash point being of higher value than the weight loss onset temperature.

6. **(original)** The method of claim 5 wherein the temperature during heating in the first phase is maintained below the flash point of the oil or oil-based compound until said is substantially removed from the green structural body.

7. (canceled)

8. (currently amended) The method of elaim 8 claim 4 wherein the oil or oil-based compound is a polyalpholefin.

9. (original) The method of claim 4 wherein the oil or oil-based compound is substantially removed prior to the binder.

10. (original) The method of claim 4 wherein the binder is a cellulose ether.

11. (original) The method of claim 10 wherein the cellulose ether binder is methylcellulose, and/or methylcellulose derivatives.

12. (canceled)

13. (canceled)

14. (canceled)

15. (original) The method of claim 1 wherein the green ceramic structural body is heated in the first phase in an oxygen-rich atmosphere having up to 21% by volume O<sub>2</sub>.

16. (currently amended) A method of firing a green ceramic structural body including an oil or oil-based compound, a binder and optionally other organic components, the method comprising:

drying the green ceramic structural body,

(a) following drying, firing the green ceramic structural body in an atmosphere containing up to 21% by volume O<sub>2</sub> to a temperature and for a time to substantially

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remove the oil or oil-based compound prior to release of the binder and other optional organic components; and,

- (b) further firing the green ceramic structural body to a temperature and for a time to initiate and sufficiently achieve the conversion of the green ceramic structural body into a fired ceramic article.
- 17. (original) The method of claim 16 wherein the oil or oil-based compound is a polyalpholefin.
- 18. (original) The method of claim 17 wherein the binder is a cellulose ether.
- 19. (original) The method of claim 18 wherein the cellulose ether binder is methylcellulose, and/or methylcellulose derivatives.
- 20. (original) The method of claim 16 wherein the further firing of the green ceramic structural body is to a temperature of 1300°C to 1450°C with a hold time of 1 hour to 20 hours.

## 21. (canceled)

- 22. (new) The method of claim 1 wherein the green ceramic structural body is heated in the first phase at or above the first weight loss onset temperature, but below the weight loss onset temperature of the second and subsequent organic compound.
- 23. (new) The method of claim 1 wherein the green ceramic structural body is heated in the first phase to a temperature at or above the first weight loss onset temperature and maintained below the flash point of the second and subsequent organic compound until said first organic compound is substantially removed from the green structural body.
- 24. (new) A method for fabricating a fired ceramic article, the method comprising the steps of:

forming a batch mixture of components comprising inorganic ceramic powder materials, an oil or an oil-based organic compound having a first weight loss onset temperature, and an organic binder compound having a second weight loss onset temperature higher than the first weight loss onset temperature;

blending the components to form a plasticized mixture;

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shaping the plasticized mixture into a green ceramic structural body; drying the green ceramic structural body;

following drying and during firing, heating the green ceramic structural body to a first temperature at or above the first weight loss onset temperature, but below the second weight loss onset temperature for a time to enable substantial removal of the oil or an oil-based organic compound, and then followed by further heating at a temperature at or above the second weight loss onset temperature until there is substantial removal of the organic binder compound; and

further heating the green ceramic structural body to a temperature and for a time to achieve the conversion of the green ceramic structural body into a fired ceramic article.

- 25. (new) The method of claim 24 wherein the heating step is carried out in an oxygen controlled atmosphere containing up to  $21\% O_2$  by volume.
- 26. (new) The method of claim 24 wherein the first temperature is below the flash point of the oil or an oil-based organic compound.
- 27. (new) The method of claim 24 wherein the step of further heating the green ceramic structural body further comprises firing at the temperature of between 600-1450°C for the time of between 1-20 hours.